EPI Newsletter

Current events in epidemiology in Ada, Boise, Elmore and Valley Counties

A bulletin on Epidemiology and Infectious Disease Control in District 4.

www.cdhd.org

Bioterrorism: No Longer If or When

Like millions of other Americans, CDHD employees and volunteers were glued to their televisions at home or at work as events unfolded in New York City and Washington, D.C. on Tuesday, September 11th. As terrible as those tragedies were, no one expected that less than a month later, Americans would be confronted by a biological attack perpetrated by an unidentified terrorist or terrorist organization. As of November 26, 2001 the CDC reported that the intentional dispersal of *Bacillus anthracis* through the U.S. mail resulted in eleven confirmed cases of inhalation anthrax, seven confirmed cases of cutaneous anthrax and five suspect cases of cutaneous anthrax. There have been five deaths. In the wake of the infections many government facilities and businesses were closed for several days because of the potential for anthrax contamination. Since October 8th over **30,000** people have been prescribed antibiotics for exposure to anthrax. In communities around the nation, emergency responders, law enforcement personnel, hazardous materials teams, physicians, laboratories, **and** public health departments have been inundated with calls from frightened and concerned citizens.

We strongly encourage physicians, laboratory staff, law enforcement, and emergency services personnel to access reliable sources of information. In particular, the *Morbidity and Mortality Weekly Report (MMWR)* published by the Centers for Disease Control and Prevention has provided expert guidance for identifying and treating anthrax since the outbreak started. Issues of the MMWR are available online at www.cdc.gov/mmwr. For this issue of the Epi News we have developed a two-sided insert for health care providers. On one side is a table, "Clinical Characteristics of Five Critical Biological Agents" and on the reverse side, a list of key contacts and website addresses for further information.

We are aware that this issue may very well be outdated by the time it is delivered. However, we feel it is important to get information to regional health care providers to ensure that ***they*** and ***we*** are prepared to deal with a potential outbreak of anthrax or any other infectious disease (smallpox comes to mind), which might be employed as a biological weapon.

Immediate reporting of an unusual occurrence of illness or cluster of illnesses is the key to preventing an infectious disease outbreak! Now, more than ever before, it is imperative that physicians, laboratories and infection control personnel be vigilant and alert to the possibility of biological terrorism. Emergency rooms, walk-in clinics and family practice offices will most likely be the first places to see patients presenting with unusual symptoms in unusual numbers.

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Today, health care professionals must take responsibility for being able to recognize the symptoms of infectious agents that have the potential to cause serious morbidity and mortality and they must report their suspicions to the health department immediately! That said, please circulate this issue of the Epi News to appropriate staff and save it for future reference. We will continue to update health care providers in our district as warranted by events.

SIGNS AND SYMPTOMS OF INHALATION ANTHRAX

(From *"Idaho Public Health Guidelines for Health Care Providers Responding to Anthrax Concerns"*, Idaho Division of Health, October 17, 2001)

- Caused by *Bacillus anthracis*, a large, encapsulated, gram-positive, aerobic, non-motile, spore-forming bacillus.
- **Incubation period** typically 1-5 days, but may be as long as 60 days. Typically a biphasic illness.
- **Initial phase** characterized by flu-like symptoms including low-grade fever, non-productive cough, malaise, fatigue, myalgias, mild chest discomfort. Rhonchi may be present, otherwise normal exam.
- **Acute phase** develops 1-5 days after initial symptoms. May be preceded by <1-3 days of improvement. Characterized by abrupt development of severe respiratory distress with dyspnea, stridor, cyanosis, and high fever. Shock and death usually follow within 24-36 hours after onset of respiratory distress.
- **CXR** may reveal mediastinal widening, often with pleural effusion, and occasionally infiltrates.

CUTANEOUS ANTHRAX

- Local skin involvement after direct contact with spores or bacilli.
- Commonly seen on exposed areas: face, neck, forearms, or hands.
- Localized itching, followed by a papular lesion that turns vesicular, followed by development of a black eschar within 7-10 days of onset of initial lesion.
- Usually non-fatal if treated with appropriate antibiotics for 7-10 days.
- Wound or wound drainage may be contagious (direct contact): follow standard wound precautions.
- Recommended treatment guidelines for inhalation or cutaneous anthrax are available from the Idaho Division of Health, Epidemiology Services Program at (208) 334-5939.

TESTING FOR ANTHRAX

- Nasal swabs **are not** considered an appropriate screening test for anthrax. Swabs are only used for epidemiological investigations once an anthrax exposure has been confirmed.
- Physicians who see **asymptomatic** patients, who do not have confirmed exposure, should reassure them that they are at little or no risk.
- Physicians who want **to rule out anthrax in patients with appropriate symptoms** should use standard diagnostic procedures, which would include chest X-rays and blood cultures.
- The microbiology laboratories at St. Luke's Regional Medical Center and Saint Alphonsus Regional Medical Center can perform the necessary serological tests to rule out anthrax. Contact the appropriate hospital laboratories for specimen collection requirements. **The hospital labs will not test <u>environmental</u> substances.**
- The Idaho Bureau of Laboratories will only perform confirmatory tests for anthrax in humans when the specimens are submitted by a hospital or clinical laboratory. <u>Physicians should not send serum samples directly to the state laboratory</u>.
- Physicians with a high index of suspicion about a particular patient should contact CDHD's Epidemiology and Surveillance Program at (208) 327-8625 immediately.

<u>Evenings and weekends contact the Idaho State Communications Center at 1-800-632-8000</u>.

- **PLEASE NOTE:** Central District Health Department **does not collect environmental samples** of suspect substances and we **do not draw blood for serologic testing.** Please do not refer patients to CDHD for testing. We are very happy to answer patients' or clients' questions about anthrax or other communicable diseases.

CLINICAL CHARACTERISTICS OF FIVE CRITICAL BIOLOGICAL AGENTS

Synthesized from various sources including, "Biological Warfare and Terrorism: Medical Issues and Response", USAMRIID Satellite Training Course, September 26-28,2000; JAMA (Consensus Statements on Biological Weapons); "Medical Management of Biological Casualties Handbook", Third Edition, USAMRIID, July 1998; "Idaho Public Health Guidelines for Health Care Providers (Anthrax)", October 2001

Disease	Incubation Period	Signs and Symptoms	Physical Exam	Clinical Tests	Key Differential Diagnosis	Duration of Illness	Case Fatality	US Epidemi-ology
Inhalation Anthrax (*Bacillus anthracis*)	1-5 days on average. (Can take up to 60 days).	Fever, malaise, cough, mild chest discomfort. Possible short recovery phase then onset of dyspnea, diaphoresis, stridor, cyanosis, shock. Death 24-36 hours after onset of severe symptoms. Hemorrhagic meningitis in up to 50% of cases.	Non-specific physical findings. Black, coal-like eschar with cutaneous form.	Serology, gram stain, polymerase chain reaction (PCR). CXR may indicate widened mediastinum. Rarely pneumonia.	Hantavirus Pulmonary Syndrome (HPS), dissecting aortic aneurysm (no fever).	3- 5 days.	Usually fatal unless diagnosed and treated early.	***At least 11 cases as of 11/26/2001**
Smallpox (*Variola major*)	7-17 days. (Average 12 days).	Fever, back pain, vomiting, malaise, headache, rigors. Papules 2-3 days later, progressing to pustular vesicles. Abundant on face and extremities initially.	Papules, pustules, or scabs of similar stage, many on face and extremities, palms and soles.	Guarnieri bodies on Giemsa or modified silver stain. Virions on electron microscopy. Also PCR, viral isolation, IHC.	Varicella, vaccinia, monkeypox, cowpox, disseminated herpes zoster.	4 weeks	Up to 30% if unvaccinated. Higher in flat-type or hemorrhagic disease.	None as of 11/26/2001
Pneumonic Plague (*Yersinia pestis*)	1-6 days. (Average 2-4 days).	High fever, chills, cough, headache, hemoptysis. Rapid progression to dyspnea, stridor and cyanosis. Death from respiratory failure, shock, and bleeding.	Rales, hemoptysis, and purpura.	IgM enzyme immunoassay, gram stain, antigen detection, PCR, culture.	HPS, tuberculosis, community-acquired pneumonia (CAP), meningococcemia rickettsioses.	1-6 days.	Usually fatal unless treated in 12-24 hours.	2-3 cases a year. Mainly in SW United States.
Botulism (*Clostridium botulinum*)	1-5 days.	Ptosis, blurred vision, diplopia, generalized weakness, dizziness, dysarthria, dysphonia, dysphagia. Followed by symmetrical descending flaccid paralysis and respiratory failure.	Generally patients remain afebrile. No fever. Patient alert, some postural hypotension, pupils unreactive, normal sensation, variable muscle weakness.	Serology, toxin assays/anaerobic cultures of blood/ stool; electromyography studies.	Guillain Barré, myasthenia gravis, tick paralysis, Mg++ intoxication, organophosphate poisoning, polio.	Death 24-72 hours or long-term respira-tory support.	High mortality without respiratory support.	Fewer than 200 cases of all forms (food borne, wound, or infant) each year.
Tularemia (*Francisella tularensis*)	1-10 days. (Average 3-5 days).	**Typhoidal**: inhalation of infectious aerosols, gastrointestinal, or intradermal challenge. **Ulceroglandular**: inoculation of the skin or mucous membranes by infected tissues. **Oculoglandular**: from inoculation of conjunctiva with infected tissue or fluids. Symptoms can include fever, headache, malaise, chest discomfort, anorexia, and non-productive cough. Pneumonia in 30-80%.	No adenopathy with typhoidal illness. Cough in pneumonic form may or may not be productive.	Serology, culture, PCR, IHC; CXR for pneumonia, mediastinal lymphadenopathy, or pleural effusion.	Atypical CAP, Q Fever, Brucellosis.	>2 weeks	10-35% if untreated.	170 cases a year. Transmitted by ticks, deer flies or contact with infected animals.

See other side for important contact numbers and website addresses for additional information.

Phone Numbers and Resources for Health Care Providers Regarding Biological Terrorism

Central District Health Department
Epidemiology & Surveillance Program
Main Office • 707 N. Armstrong Place • Boise ID 83704
Serving Ada, Boise, Elmore, and Valley Counties

REPORTING A SUSPECTED CASE OR UNUSUAL OCCURRENCE OF ILLNESS:

Central District Health Department — **208-327-8625**
Monday-Friday 8:00 AM - 5:00 PM

Idaho Division of Health — **208-334-5939**
Monday-Friday 8:00 AM - 5:00 PM

***** Evenings, Weekends & Holidays *****
Idaho State Communications Center — **1-800-632-8000**
Appropriate Public Health officials will be notified.

KEY WEBSITES FOR MEDICAL AND PUBLIC HEALTH INFORMATION:

Central District Health Department — www.cdhd.org
Current health alerts, fact sheets, news releases, etc.

Center for Nonproliferation Studies — www.cns.miis.edu
The Monterey Institute of International Studies.

Health Topics A to Z — www.cdc.gov/health/diseases
Fact sheets and information on communicable diseases.

Henry L. Stimson Center — www.stimson.org
Social and political issues related to bioterrorism.

Johns Hopkins Center for Civilian Biodefense Studies — www.hopkins-biodefense.org
Consensus statements on biological agents. Also current information on biodefense efforts, etc.

Journal of the American Medical Association (JAMA) — www.jama.com
Consensus statements on biological agents including diagnosis, prophylaxis, and treatment.

Morbidity and Mortality Weekly Report (MMWR) — www.cdc.gov/mmwr
Centers for Disease Control and Prevention.

New York City Department of Health — www.ci.nyc.ny.us
Updates on anthrax cases.

Public Health Emergency Preparedness and Response — www.bt.cdc.gov
Centers for Disease Control and Prevention.

What is the Health Department's Role in Responding to Bioterrorism?

CDHD has been involved in planning and organizing a public health response to biological terrorism for over two years. CDHD staff has attended national symposia on bioterrorism and the Department has participated in local emergency planning efforts for the past twenty years. CDHD has developed a broadcast fax capability for alerting physicians, emergency rooms, laboratories and law enforcement of an actual or emerging communicable disease threat. Federal funding will soon be available to increase that capability so electronic notifications can be delivered even faster. Through its collegial association with the Idaho State Division of Health and the state's Epidemiology Services Program, CDHD and all Idaho health districts are kept informed of late breaking information from the Centers for Disease Control (CDC) and other government agencies. CDHD's excellent relationships with area physicians, infection control programs at area hospitals, and the staff at the Idaho State Bureau of Laboratories in Boise assures that all parties can communicate quickly and effectively in a public health emergency.

In the event of a confirmed biological attack in this region, CDHD would be one of several agencies involved in responding to it. A terrorist act involving a biological agent is a crime. Therefore, under current regulations**, the FBI would be the lead agency** involved in coordinating any response. Public health would be one member of a team comprised of law enforcement (federal, state and local), the CDC, state and local government, local emergency response groups and most likely the military. Communicable disease epidemiologists would be crucial to the investigation of cases and contacts and experienced public health nursing staff would be vital to any immunization efforts.

The most critical role in detecting an unusual occurrence of illness is filled by emergency room physicians, urgent care and family practice physicians, along with first responders, hospital labs and infection control departments. They will be the first healthcare providers to see patients who may be infected with a biological warfare agent. **Therefore, immediate reporting of suspect cases of an unusual illness is imperative.** Early intervention is critical in stopping the spread of infectious disease. Be alert, be prepared, and know whom to call.

Monday-Friday / 8:00 AM-5:00 PM
CDHD Epidemiology & Surveillance
(208) 327-8625

Evenings, Weekends, Holidays
ID State Communications Center
1-800-632-8000

VIDEOCONFERENCE:

"Smallpox: What Every Clinician Should Know"

Thursday, December 13, 2001
10:00 a.m. - 1:00 p.m.

Central District Health Department • 707 N. Armstrong Place
Limited Seating. Pre-registration strongly encouraged • Register at www.cdhd.org

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PLEASE CIRCULATE TO ALL MEDICAL STAFF

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Selected Reportable Diseases - District 4